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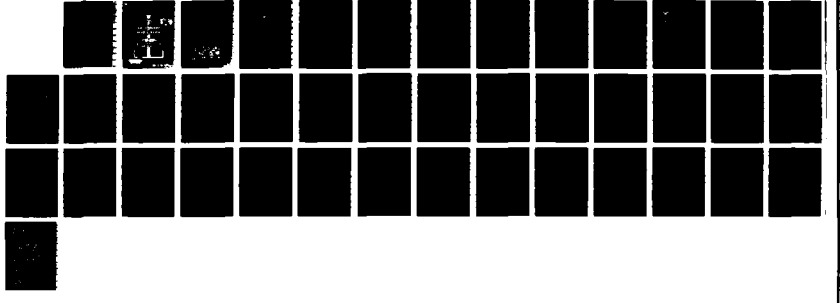

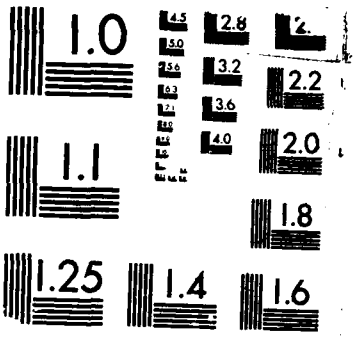

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AIR COMMAND AND STAFF COLLEGE

STUDENT REPORT

FLIGHT INFORMATION PUBLICATION (FLIP) FEEDBACK

MR. CHARLES L. MCGAUGH, JR. 88-1755
GS-12

"insights into tomorrow"

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This report investigates the USAF feedback system for Flight Information Publications, commonly referred to as FLIP. The primary focus of this research project analyzes the usage of the DMA Quality Feedback Card as a method for aviators to submit recommendations to improve FLIPs. This project studies the past use of the feedback card, current opinions of aviators attending ACSC Class of 1988, and the principle OPRs for the USAF feedback system. The concluding remarks provide recommendations to enhance the USAF FLIP feedback system. Emphasis is placed on increasing the interaction between customers and producers.

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PREFACE

Flight Information Publications (FLIP) are products used by every aviator in the military services and are considered "Critical to Flight Safety." In other words, they can cost an aviator their life if information is inaccurate, incomplete or missing. An error on an approach plate or enroute chart causes confusion in the cockpit. Generally, pilots accept FLIP products as error free and often conclude that the defect resides within their own thinking process rather than the product itself. The result can be anxiety, confusion, delayed decision making, and distraction from dealing with his changing environment. Defects in FLIP products cause the pilot to spend valuable time analyzing the FLIP products instead of scanning aircraft instruments or looking for potential traffic. Overall, errors detract from the intended purpose of FLIP products which is to aid and assist aircrews in performing their mission.

The Defense Mapping Agency (DMA) Quality Feedback Card is one method that can be used to supply DoD agencies and military organizations with quick feedback relative to FLIP products. Feedback is currently restricted to errors and/or omissions in FLIP products. This research project addresses the possibility for FLIP customers to use this feedback card to also suggest recommendations for improvements. Policies, regulations, opinions, and training on the USAF FLIP feedback system are discussed as well.

Often members of the Federal Government and Armed Forces forget the people and organizations they serve. The so called "bread and butter" of the Air Force is their capability to accomplish their mission which is aerospace operations. Men and women aviators are key participants in accomplishing Air Force missions and use FLIP products daily in completing their assignments. Concentration must be placed on making their jobs easier, safer, and more efficient. Providing mechanisms where the interaction is free flowing between aviators and supporting organizations must have prime consideration. Improving the FLIP feedback process is one step in that direction.

CONTINUED

ACKNOWLEDGMENTS

Many people have contributed their time in making this research project a success. A giant "thank you" belongs to Air Command and Staff College (ACSC) advisor, Major Larry Pulcher, for his patience, encouragement, and guidance throughout this project. A special thanks to Captain Wayne Haggstrom from the Defense Mapping Agency Aerospace Center for suppling the bits and bytes used in data base analysis. The following organizations deserve thanks for taking time to answer many, many questions: HQ USAF/XOORF, AFCC/ATTE, USAFIFC/AI, and ATC/3305 School Squadron. The 1973rd Communications Group (AFCC)/SVF folks provided unlimited support in reading surveys and producing mass amounts of "information" from very little "data." Finally, thanks are extended to the aviators of ACSC, Class of 1988, who participated in a survey associated with this research project.

ABOUT THE AUTHOR

Mr. Charles L. McGaugh, Jr. graduated from Columbia College, Missouri in 1985 with a bachelor's degree in Business Management. Mr. McGaugh acquired aviation experience as an aerial navigator with the United States Marine Corps. During his tour of duty from 1975 to 1979, he accumulated over 2000 flight hours in the KC-130 F and R models. In 1980, he began work with the Defense Mapping Agency Aerospace Center in St. Louis, Missouri. During his seven years with the agency, he has performed many duties from compiling charts to research analysis. His most recent assignment was as a quality assurance program manager at plant-staff level. Mr. McGaugh is currently working on his MBA at the University of Missouri, St. Louis.

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EXECUTIVE SUMMARY

Part of our College mission is distribution of the students' problem solving products to DOD sponsors and other interested agencies to enhance insight into contemporary, defense related issues. While the College has accepted this product as meeting academic requirements for graduation, the views and opinions expressed or implied are solely those of the author and should not be construed as carrying official sanction.

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REPORT NUMBER : 88-1755

AUTHOR(S) : GS-12, MR. CHARLES L. MCGAUGH, JR., DMAAC

TITLE : FLIGHT INFORMATION PUBLICATION (FLIP) FEEDBACK

I. Purpose: To analyze the United States Air Force (USAF) FLIP feedback system and use of the DMA Quality Feedback Card within this system.

II. Problem: The Defense Mapping Agency Aerospace Center (DMAAC) has compiled data indicating some USAF aviators are using the DMA Quality Feedback Card for reasons other than it's intended purpose. Confusion exists between USAF policy making organizations (HQ USAF), training centers (ATC), and FLIP processing facilities (USAFIFC and AFCC) on the standardization of FLIP feedback methods.

III. Data: Data analyzed by DMAAC relative to USAF feedback cards includes all cards submitted between January 1986 and September 1987. USAF aviator opinions were gathered via a survey administered to 249 officers attending the Air Command and Staff College (ACSC), Class of 1988. Further research involved conversations with representatives from HQ USAF, USAFIFC, AFCC, ATC, DMA, and DMAAC.

IV. Conclusions: The purpose of the DMA Quality Feedback Card was considered vague by both DMA and USAF organizations. USAF

training on the FLIP feedback system did not exist at ATC level. From the ACSC survey results, it was concluded that USAF aviators are not familiar with FLIP General Planning Document, Chapter Eleven or the associated Air Force regulations addressing this feedback process. Based on the evidence gathered through the DMAAC Field Correspondence Data Base (FICODAB), the current trend of misuse will continue if changes are not made in the above mentioned areas.

V. Recommendations: The DMA Quality Feedback Card should be designated by the USAF as an acceptable mechanism for submission of either quality related items or recommendations for improvements. This designation should be coupled with a USAF staffed FLIP Coordinating Committee (FCC) request for the other military services agreement. Next, the USAF should implement policies for ensuring any recommendations for improvements are properly staffed by USAFIFC or AFCC. These policy changes should be accompanied with guidance in FLIP General Planning Document, Chapter Eleven outlining the new procedures. Finally, the USAF should develop and implement a block of instruction on the USAF FLIP feedback process and use of the feedback card. This instruction should be given during Undergraduate Flying Training to ensure standardized understanding among aviators. Once these USAF and FCC items have been accomplished, DMA should develop and implement new guidance on the DMA Quality Feedback Card in FLIP General Planning Document, Chapter Eleven and in FLIP Enroute Supplements, General Information sections. Additionally, DMA should add a note to the feedback card itself directing customers to newly published guidance in the Enroute Supplements for clarification on feedback card usage. Please refer to Appendix B for a list of these recommendations with the suggested Offices of Primary Responsibility.

Chapter One

INTRODUCTION TO THE PROBLEM

Quality is a subject often treated as a "buzz word" rather than an attribute worthy of study (2:130-132). A quality product, in this paper, refers to a defect free product which fulfills the use it was designed for. This research project will attempt to persuade selected groups to analyze their philosophy on quality, especially, in the area of quality feedback, as it pertains to Flight Information Publications (FLIP). FLIPs are used by U.S. military services, civilians, and many foreign countries to support aviators and mission planners in the aeronautical arena. Quality feedback is an important vehicle for ensuring products used by our armed forces meet combat requirements and enhance their overall missions. FLIPs, produced by the Defense Mapping Agency (DMA), contain a pre-addressed, postage paid, comment card known as the "DMA Quality Feedback Card". A copy of this feedback mechanism is portrayed in Figures 1 and 2. Actual data collected from feedback cards and current USAF aviator opinions on FLIP feedback will be analyzed throughout this project.

A component of DMA, the Aerospace Center (DMAAC), is tasked with the responsibility to maintain and publish FLIP products. Methods for submitting updates to FLIP products are outlined in DMA regulations derived from agreements between the military services. FLIP customers are provided feedback guidance in FLIP General Planning Document, Chapter Eleven. Chapter Eleven outlines procedures for submitting routine updates and recommendations for improvements to FLIP products. Routine updates refer to changes in aeronautical information that have been planned by a military service or airport and are normally submitted by an organization rather than an individual. Recommendations for improvements are items that could enhance or improve the use of FLIP products. A recommendation submitted via the DMA Quality Feedback Card is normally a suggestion from an individual rather than an organization. Chapter Eleven contains instructions for each service on the feedback process, addresses, and phone numbers for the military service Offices of Primary Responsibility (OPRs). Also, included in this chapter, is guidance for the proper use of the DMA Quality Feedback Card, as agreed upon by the military services (6:11-1).

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3200 S 2ND ST
ST LOUIS MO 63118-9980

Figure 1: DMA Quality Feedback Card (Front)

DMA QUALITY FEEDBACK CARD

DMA ACCOUNT NUMBER (if available)	SUBMISSION DATE	PRODUCT TYPE	PRODUCT NAME/NUMBER AND EDITION OR DATE	PAGE/PARA. NO./ETC

COMPONENT
- ☐ AIR FORCE ☐ ARMY
- ☐ NAVY ☐ MARINES
- ☐ DOD ☐ CIVILIAN
- ☐ COAST GUARD
- ☐ OTHER (specify)

NAME

ORGANIZATION/ADDRESS

PHONE

QUALITY PROBLEM
- ☐ DISTRIBUTION INCOMPLETE
- ☐ RECEIVED IN POOR CONDITION
- ☐ BORDER INFO INCORRECT
- ☐ INCORRECT HEIGHT/DEPTH
- ☐ INCORRECT POSITION
- ☐ OBSCURE DATA
- ☐ MISSING DATA
- ☐ POOR MATCH
- ☐ DUPLICATE FEATURE
- ☐ INCONSISTENT DATA
- ☐ OTHER

DESCRIPTION OF QUALITY PROBLEM *(SUBMIT UNCLASSIFIED DATA ONLY)*

FOR DMA USE ONLY				
CONTROL NUMBER	RECEIVED BY/DATE	REPLY DATE	*SEND CLASSIFIED FEEDBACK THROUGH AUTHORIZED CHANNELS*	THIS CARD DOES NOT REPLACE EXISTING MILITARY DEPARTMENT PROCEDURES FOR SUBMISSION OF ROUTINE CHANGES

- UNCLASSIFIED DATA ONLY -

DMA FORM 8560-1
JUL 86

Figure 2: DMA Quality Feedback Card (Back)

Since FLIP products are critical to flight safety, the card was designed by DMA to facilitate customers in notifying DMAAC of any quality related problems quickly and easily. Quality related problems are those associated with printing, completeness, paper quality, differing data between two overlapping products, etc. Recognizing the differences between quality related problems, recommendations for improvements, and routine updates is essential to understanding the problems addressed in this paper.

DMAAC has collected data which indicates some FLIP customers are using the DMA Quality Feedback Card for reasons other than quality related matters. This defeats the intended purpose of the card as defined by the Military Departments (MILDEP). Initial data analysis prompted further investigation into reasons constituting the improper use of the FLIP feedback card.

The USAF MILDEP is the largest user of FLIP products according to FLIP distribution and account statistics, maintained by the Defense Mapping Agency Combat Support Center (DMACSC). Logically, the USAF has also submitted 58 percent of the DMA Quality Feedback Cards received by DMAAC over the past 2 years. For the purpose of this study, analysis will be limited to those feedback cards and the USAF FLIP feedback system only.

Chapter Two

METHOD OF ANALYSIS

This project follows a path designed to inform the reader about the overall FLIP feedback system including past usage, current treatment, and ideas for future methods of soliciting feedback. Intended benefits from this research are to improve the safety and reliability of FLIP products and increase customer knowledge relative to the FLIP feedback process.

The first process was to analyze DMA Quality Feedback Cards submitted by USAF customers from January 1986 through September 1987. The primary analysis focused on those cards that related to FLIPs and identified other than quality related problems. During this segment of research, an explanation of current DMA policy involving the handling and processing of FLIP feedback is also discussed.

The next step addressed the guidance and training provided to USAF aviators on submitting updates and recommendations for improvements to FLIPs. Information was gathered by reviewing Air Force regulations identified in the FLIP General Planning Document, phone conversations with USAF Air Training Command (ATC), and training syllabi used in Undergraduate Flying Training (UFT). Emphasis was placed on determining the amount, type, frequency, and location of training e.g. Undergraduate Pilot Training (UPT), Major Command (MAJCOM) specific training, etc.

A significant amount of research focused on the purposes of the USAF FLIP feedback system and the DMA Quality Feedback Card. During this phase of research, the OPRs for Air Force regulations on FLIP feedback and the organizations responsible for processing FLIP changes were contacted for their views on the feedback card.

The final process concentrated on results from a survey administered to a portion of the Air Command and Staff College (ACSC), Class of 1988. USAF aviators were surveyed on items such as FLIP training, knowledge of FLIP update regulations and, most importantly, what they considered to be the <u>best</u> mechanism to submit recommendations for improving FLIP products. From this survey, inferences are made to the equivalent population of majors in the USAF and, finally, generalizations about all USAF aviators.

The final chapter outlines a detailed list of recommendations that the author believes may produce a better FLIP feedback system for the USAF. In this chapter, the advantages and disadvantages of each recommendation are also discussed. Along with these recommendations, an action plan is provided in Appendix B that suggests OPRs for each phase of implementation.

Chapter Three

FEEDBACK CARD ANALYSIS

Ideas were formulated for this research project by a DMAAC quality assurance program manager. During his daily FLIP activities, he recognized a significant number of USAF aviators using the DMA Quality Feedback Card for reasons other than it's prescribed purpose. These observations resulted in a detailed analysis of a data base designed to store and statistically tabulate feedback cards.

Contained in this computer file, known as the Field Correspondence Data Base (FICODAB), is information from feedback cards, such as name, address, phone number, and the type of problem identified. Once the card is received and entered into FICODAB, the appropriate production department within DMAAC is tasked to determine the cause of the problem, take corrective action to immediately resolve the situation and, finally, preventative action to eliminate it's reoccurrence.

During this process, many feedback cards are identified by DMAAC production departments as non-quality related items and returned to the DMAAC OPR. The card is reviewed and the appropriate action office (outside DMAAC) is determined e.g. USAF Instrument Flight Center (USAFIFC), AF Communication Command (AFCC), Federal Aviation Administration (FAA) or another DMA component. The choice of action office is based on the type of problem, the customer's branch of service, and the published OPR guidance in FLIP General Planning Document, Chapter Eleven.

A review of FICODAB revealed that one-third of the DMA Quality Feedback Cards submitted were non-quality related items. Almost 80 percent of these items were identified as recommendations for improvements to FLIP products or services. The remaining cards were either routine changes to flight information or requests for a change in distribution status. The cards recommending improvements to FLIP products were explored at length to determine any trends in specific FLIP areas, MAJCOMs, problems, etc. The only trend noted was that over 60 percent were submitted by Military Airlift Command (MAC) aviators.

DMA recognizes and understands that routine changes to flight information must be processed by the responsible MILDEP OPR prior to implementation by a DMA component. DMA policy states that these cards are to be promptly forwarded to the appropriate MILDEP OPR for processing. No action can be taken by DMAAC until official MILDEP authorization is received through proper channels. Distribution issues are also promptly forwarded to DMACSC for processing. Often, these types of requests must be coordinated with a customer's MAJCOM prior to any action by a DMA component. These procedures attempt to ensure validity and coordination as a MILDEP position or request.

DMA statistics indicate 67 percent of USAF customers using the DMA Quality Feedback Card, have used it appropriately to identify quality related items. This compares with only 25 percent of USAF customers that have used the card to recommend improvements to FLIP products. The term "customer" used in this sense refers to an individual aviator versus a USAF organization. The guidance in FLIP General Planning Document, Chapter Eleven, AF Regulation 55-2, titled: Operations Airspace Management and AF Regulation 60-27, titled: Flying Instrument Procedures, all confirm that these 25 percent have violated MILDEP guidance. DMAAC policy stipulates that customers who have used the feedback card to recommend improvements be informed they have used an improper mechanism for submitting their comments. The customer is also informed, that a copy of their card has been forwarded to the appropriate MILDEP OPR. However, this action <u>does not</u> guarantee the customer's recommendation will be staffed or even considered by the MILDEP OPR until it has been received through the appropriate channels outlined in FLIP General Planning, Chapter Eleven. More simply, the DMA Quality Feedback Card has been identified by the USAF as an inappropriate mechanism for aviators to recommend improvements to FLIP products. This policy is questioned throughout the remainder of this research project.

Chapter Four

FLIP TRAINING AND GUIDANCE

An area that is notoriously blamed when a system or process fails is training. Investigation proved that USAF FLIP users have limited guidance and/or training on the feedback process. The guidance available in FLIP General Planning Document, Chapter Eleven is very brief and refers the user to AF Regulations 55-2 and 60-27 for further instructions. Both regulations are geared towards the flight information manager rather than the FLIP user. Also, specific instructions for submitting recommendations for improvements to FLIP products are not covered in either regulation. This creates a void, since FLIP customers have no indication through USAF guidance that using the DMA Quality Feedback Card for recommending improvements to FLIPs is inappropriate. Thus, when FLIP customers are told they have used an incorrect medium for providing feedback, it is easy to understand their confusion and hesitation in providing future feedback. However, the purpose and intended use of the DMA Quality Feedback Card is covered separately in Chapter Eleven of FLIP General Planning.

The initial training for pilots and navigators in FLIPs is accomplished and directed through ATC, located at Randolph AFB. This MAJCOM administers the overall policy on type, location, and frequency of training provided to USAF aviators. ATC has training syllabi for the instruction provided to pilots and navigators during UFT. Both syllabi were reviewed for FLIP training and the OPRs were contacted for their opinions on the feedback issue.

The syllabus for UPT is ATC Syllabus, P-V4A-A (TRIM), titled: Syllabus of Instruction for Undergraduate Pilot Training, T-37/T-38, dated: August 1986. This syllabus has three blocks or units on FLIP training consisting of 1 hour each. These units address the nature of FLIPs, format, terminology, and primarily, the use of FLIP products. The various aspects of submitting routine changes to FLIPs, recommendations for improvements, and how to deal with quality related problems in FLIP products are not addressed in the UPT syllabus (4:--). Discussion with ATC staff, relating to this issue, resulted in their recommendation for this to be addressed in FLIP products. Since some guidance is provided in

FLIP General Planning, it is assumed the UPT curriculum staff have limited knowledge on the USAF FLIP feedback process.

The other primary flight training provided under ATC authority is Undergraduate Navigator Training (UNT). The outline for this training is ATC Syllabus, S-V8N-C, titled: Syllabus of Instruction for Specialized Undergraduate Navigator Training Core Course, dated: July 1987. Under this guidance, a total of 7 training units are provided for a total of 15 hours of FLIP instruction. This training is much more detailed on the technical aspects of FLIP products than the training provided at UPT. The function of mission planning is an additional area covered, however, FLIP feedback training is missing in UNT as well (5:--). Conversation with the ATC staff indicated they perceived this problem as easily solved by including a short segment on FLIP General Planning Document, Chapter Eleven in their curriculum. ATC indicated they would add a segment to require each UNT student to read Chapter Eleven and review the DMA Quality Feedback Card located in FLIP Enroute Supplements. The UNT curriculum staff seemed receptive to potential problems in the FLIP feedback arena and offered their help in rectifying the situation. Recommendations will be covered at length in Chapter Seven. However, if the present system of FLIP feedback is retained, this revision to the training curriculum would certainly correct some FLIP feedback problems.

Chapter Five

POLICIES AND OPINIONS

The OPRs for the USAF and DMA FLIP feedback systems were contacted to determine what specific objectives were established during the design and implementation of the DMA Quality Feedback Card, the guidance in FLIP General Planning Document, Chapter Eleven, and the applicability of Air Force Regulations 55-2 and 60-27. This chapter also reviews the current policies and opinions of those OPRs on the FLIP feedback process.

The ultimate USAF responsibility for FLIP products resides at HQ USAF, XOORF (7:3). From this office, USAF requirements are established and forwarded to HQ DMA. DMA, in turn, establishes production requirements for DMAAC who is responsible for the actual production and maintenance of FLIP products. The FLIP production requirements office at DMAAC, PRF, deals directly with HQ USAF, USAFIFC and AFCC in fine tuning USAF customer requirements involving FLIP. Conversations with these offices and review of memoranda documenting the establishment of a user feedback card were analyzed to establish initial intentions, objectives, and philosophies.

The Air Staff office, XOORF, stated that USAFIFC is the primary focal point for operational FLIP matters. XOORF perceives the DMA Quality Feedback Card as a vehicle designed by DMA for identifying quality related items. This card and its quality related intent was agreed upon by the USAF and the sister services in 1983. XOORF also feels this card has merit in identifying recommendations for improvements to FLIPs. However, XOORF stated that recommendations submitted via the feedback card can not be regarded as a coordinated USAF or MAJCOM recommendation. XOORF also stated that recommendations received by DMA should be forwarded to USAFIFC for resolution and will be staffed on a priority basis, with MAJCOM, wing, and squadron requests having top ranking. They further stated that Air Force Regulation 55-2 is designed for airspace management and is not intended for operational aircrews. The Air Staff office stated the USAF position on submission of routine FLIP revisions remains unchanged. Routine changes must continue to be processed through USAFIFC or AFCC depending on the type of FLIP request. Continuation of this policy will ensure all DoD, USAF, and FAA regulations are adhered to prior to any change

appearing in a FLIP product. Recognizing the potential confusion in the FLIP feedback process, the Air Staff suggested three ideas for improving the current system. The first item was to concentrate specific aviator training at ATC and/or MAJCOM level on the USAF FLIP feedback process including proper use of the DMA Quality Feedback Card. The second item suggested by XOORF was to provide additional guidance on the feedback card itself referring the customer to FLIP General Planning Document, Chapter Eleven for further instructions. Furthermore, they recommended the customer be informed that use of the feedback card for recommending improvements will not ensure their comments are properly staffed.

As mentioned above, USAFIFC is the focal point for the majority of FLIP activity in the USAF. Their office ensures all FLIP changes meet USAF standards and are properly applied to FLIP products (8:3). USAFIFC policy states the only approved mechanism to submit routine changes and recommendations for improvements to FLIPs is through their office. Additionally, any recommendations for improvements forwarded to USAFIFC from DMA that are not "Critical to Flight Safety" will not be staffed. Their philosophy is that they have neither the manpower nor time to handle changes or recommendations that are not MAJCOM, wing or squadron requests. USAFIFC believes there is sufficient guidance on these feedback procedures including their address, message address, and phone number in FLIP General Planning Document, Chapter Eleven. They understand that few aviators are aware of this guidance and feel training aircrews on FLIP feedback should be emphasized rather than changing the current feedback process.

AFCC is responsible for a segment of FLIP products called Terminal Procedures. The Evaluation Division at AFCC, ATTE, ensures all USAF Terminal Procedures in FLIPs meet DoD, USAF, and FAA regulations and coordinates these revisions with DMAAC production units (8:4-7). Since Terminal Instrument Procedures require flyability checks to ensure the procedure is valid, AFCC welcomes any comments or recommendations for improvements by the operational aircrews who fly them. But, AFCC stated that requests for new procedures and routine changes must continue to be processed in accordance with Air Force Regulation 60-27. Maintenance and use of Terminal Procedures must be accomplished as a coordinated USAF position, not as individual requests. Otherwise, FLIP products will become cluttered with procedures that are not being used or used so little it is not cost effective to maintain them. However, AFCC also stated that all DMA Quality Feedback Cards received by their organization are staffed, regardless if the customer used the card improperly. ATTE stated that improper use of the DMA Quality Feedback Card simply slows down the process since they must re-route the request or recommendation to the appropriate MAJCOM AFCC unit prior to it's implementation.

Another reason their division does not object to recommendations for improvements submitted via DMA Quality Feedback Cards is that a majority of the items on a Terminal Procedure are "Critical to Flight Safety". Therefore, this card allows the customer a quick response mechanism to identify the problem in a timely manner. Also, the number of feedback cards received by AFCC is very low compared to those forwarded to USAFIFC from DMAAC. This may account for some of the differing philosophies displayed by AFCC and USAFIFC.

DMAAC has another view on the use of the DMA Quality Feedback Card. DMAAC has identified the purpose of the card as a vehicle for aircrews to quickly and easily notify the producer of quality related problems (6:11-2). Due to the critical nature of FLIP products, this allows customers a method to identify errors, omissions or incomplete products to DMAAC virtually without effort. But, DMAAC also sees itself as a service organization and attempts to meet each customers request no matter what form it may take. If the customer uses the card to change their FLIP distribution, DMAAC forwards the card to DMACSC. If the customer submits a recommendation to improve the FLIP enroute coverage, then the card is forwarded to USAFIFC. DMAAC policy is to forward these cards to the appropriate OPR and inform the customer that their comments are appreciated. No follow-up action beyond this is practiced by DMAAC since manpower constraints and lack of authority in FLIP content apply. The MILDEPs maintain control over the content published in FLIP products, while DMAAC ensures the format, color, paper quality, etc. is correct. Almost 70 percent of the cards received from USAF aviators are categorized as legitimate quality related concerns. From customer feedback, DMAAC has implemented many new quality control systems to prevent future related problems. The DMA Quality Feedback Card is considered by DMAAC as a successful feedback mechanism.

Chapter Six

ACSC SURVEY STATISTICS

After reviewing past usage of the DMA Quality Feedback Card, a study of current USAF opinion and philosophy on FLIP feedback was required. One method to acquire current opinion is to use the survey instrument. This survey was designed to acquire demographic information about the individual, his/her knowledge of the FLIP feedback process, training received on FLIP feedback, and finally, individual opinion on the best mechanism or method for a USAF aviator to submit recommendations for improvements to FLIP products. A copy of the survey is located in Appendix A.

The survey was administered to 249 officers attending or assigned to ACSC. The sample was limited to USAF majors possessing an aeronautical rating. One hundred and eighty-nine completed surveys were returned for 76 percent response rate.

Demographic data was gathered on the survey and, where possible, compared to all USAF rated majors. The Air Force Military Personnel Center (AFMPC) provided all the necessary statistics about the USAF as a whole. Sixty-nine point three percent of the survey participants were rated as pilots and the remaining 30.7 percent were aerial navigators. This closely correlates to actual USAF percentages of 70.6 percent pilots and 29.4 percent navigators. The survey also identified the MAJCOM where the officer gained a majority of their flying experience. The choices included the Alaska Air Command (AAK), ATC, MAC, Pacific Air Forces (PACAF), Strategic Air Command (SAC), Tactical Air Command (TAC), and United States Air Forces in Europe (USAFE). The results from this category were, at first, confusing since the only categories chosen were MAC with 44.2 percent, SAC with 37.2 percent, ATC with 14.8 percent and the remaining 3.8 percent in PACAF. It seemed odd that TAC was not chosen yet, if Tactical Air Forces (TAF) had been a choice, the possibility of TAF being selected would have been greater. Fighter pilots change MAJCOMs depending on the location of their assignment, unlike many of the other MAJCOMs such as MAC and SAC. Thus, many of those surveyed who answered ATC or PACAF were part of TAC at some point in time and consider themselves part of TAF. However, TAF is not an official USAF acronym and was not used in the survey due to this fact.

Survey participants were next asked to identify the number of years of rated service they had. Sixty-six point seven percent of the sample had 10 to 13 years of rated service with no significant differences noted between pilots and navigators. Ten to thirteen year majors with an aeronautical rating comprise about 14.4 percent of the total USAF rated community. Majors attending ACSC are considered to be in the top 15 to 25 percent of their peer group and provide an excellent sample for analysis due to their diverse backgrounds, training, experience, ratings, etc.

The last demographic question was designed to establish the extent of FLIP use. The sample was asked how many sorties (missions) they flew each month. Sixty-one point seven percent indicated they averaged 5 to 15 sorties per month while 26.2 percent averaged 16 to 25 per month. FLIP products are most commonly used during the take-off and landing portions of sorties. Thus, on the average, a majority of the survey participants referenced FLIP products a minimum of 15 to 35 times per month.

The next survey question asked the sample if they had ever used the DMA Quality Feedback Card. Each survey had a copy of the feedback card attached for easy reference. Eighty point six percent stated they knew of the card, but had never used it, while 15.1 percent had no prior knowledge of the card. Only 4.3 percent of the sample had ever used the card. The high percentage of officers with the knowledge of the card, 84.9 percent, can be attributed to the feedback card appearing in the middle of the most commonly used FLIP product, the Enroute Supplement. No significant differences were noted between the MAJCOMs. However, the high percentage of officers not using the feedback card and possible causes will be covered later in this analysis.

A follow up question asked the officers what they perceived the purpose of the feedback card to be. Since this question allowed multiple responses, a table was constructed to show the percentages for each response by MAJCOM. Table 1 displays the MAJCOMs on the left axis and the corresponding answers to question number 158 across the top horizontal axis. The total percentages are displayed at the bottom of each column. Overall, only 6 percent felt the feedback card should be used to submit updates or changes to FLIP products while 15 percent considered it a vehicle for identifying quality related items. Eighteen percent felt it was a good mechanism to recommend improvements to FLIP products. Response "D" was by far the leader for this question. Fifty-two percent felt the purpose of the DMA Quality Feedback Card was <u>best</u> described as "all of the above". It appears USAF aviators feel the feedback card should not have restricted use. The variances by MAJCOMs was most notable on this response since ATC and MAC responses

were close to 60 percent while PACAF and SAC responses were closer to 35 percent. The large MAC percentage for response "D" could be attributed to the high amount of standard airway flying MAC performs. SAC, on the other hand, performs a large percentage of its missions in a low-level, non-FLIP environment. The disparities between ATC and PACAF are unexplainable from the information gathered. The only conclusion is the uncertainty displayed by USAF aviators as to the purpose of the DMA Quality Feedback Card.

	A	B	C	D	E
ATC	10%	0%	10%	63%	17%
MAC	14%	6%	16%	58%	6%
PACAF	0%	0%	33%	33%	34%
SAC	20%	9%	23%	39%	9%
TOTAL	15%	6%	18%	52%	9%

Table 1: Survey Question Number 156

The next question asked if they were familiar with FLIP General Planning Document, Chapter Eleven. This chapter, as previously stated, provides the customer with explanations and points of contact for processing FLIP feedback. Recommendations for improvements, routine updates, and quality related items are all addressed in this chapter. Sixty-nine point nine percent indicated they were not familiar with this guidance. The percentages by MAJCOMs indicated 76.8 percent of the SAC participants were unfamiliar with Chapter Eleven, while 60.7 percent of the ATC responses also fell in this category. Both PACAF and MAC had approximately one-third of their respondents being familiar with this portion of the FLIP General Planning Document. Overall, the lack of knowledge in FLIP update guidance seems to be an area worth attention.

Inside FLIP General Planning Document, Chapter Eleven, various regulations are quoted as source for the procedures identified by the various services. Under USAF guidance, Air Force Regulations 55-2 and 60-27 are identified as the official guidelines on this subject. Survey participants were asked if they were familiar with these regulations. Eighty-nine point five percent answered no to either regulation. Once again, the lack of understanding or awareness of official USAF policies on FLIP feedback issues was emphasized.

The next few questions addressed the training provided to USAF officers on FLIP feedback. Eighty point two percent indicated they had never received training on this subject. From the 19.8 percent who responded yes to the training, 78.6 percent said the training comprised a total of 1 hour on FLIPs. Forty-four point four percent stated the instruction was given during UFT, another 48.1 percent received it during wing or squadron transition and the remaining 7.5 percent received instruction during advanced flying training. Specifics on the training provided through ATC is discussed in Chapter Four. From these results, an assumption can be made that training, or lack of it, on FLIP feedback appears to be a major constraint in the proper functioning of the USAF FLIP feedback system.

Finally, survey participants were asked to identify their choice for the best vehicle to submit recommendations for improvements to FLIP products. Since the current system of submitting routine updates to FLIPs is regarded by both DMA and the MILDEPs as the most appropriate method, this area was not addressed in the survey. Participants chose two methods that they perceived as the best vehicle with almost equal emphasis. The DMA Quality Feedback Card was selected by 44.2 percent of the survey participants while a simple phone call was preferred by a 41.4 percent margin. Many who chose the phone call as the best method added remarks that an autovon and toll free number would fulfill this request in the best manner. The remaining choices were 6.6 percent by letter or memorandum, 5 percent via the AF Suggestion Program and 2.8 percent via the AF Model Installation Program.

Men and women officers attending ACSC are mid-career officers who generally have 10 to 15 years of service. Most have experienced some form of USAF training and assignments in operational units or MAJCOM staff positions. This survey represents answers from that highly skilled and highly rated group. To survey the entire population of USAF rated officers, 35,823, would be both time consuming and very expensive. These survey results can be easily compared to 10 to 13 year Majors in the USAF rated community due to the numerous similar characteristics. Since these officers come from varied backgrounds, training, and flight experience, generalizations about the entire USAF rated community should be easily accepted (1:5-8).

Chapter Seven

CONCLUSIONS AND RECOMMENDATIONS

Research and analysis is worthwhile only if information can be derived that allows understanding and gives meaning to problems or situations. This project followed a course designed to clarify what the purpose of the DMA Quality Feedback Card is and the best method for USAF aviators to submit recommendations for improvements to FLIP products. An additional benefit could be to increase USAF aviators participation in the feedback process, thereby increasing their confidence in FLIP products. This chapter outlines facts from research and conclusions by the author from those facts.

All USAF and DMAAC OPRs agreed that the primary purpose of the DMA Quality Feedback Card is to notify DMAAC of quality related items. Those OPRs also agreed that using the feedback card for submitting routine changes is incorrect and slows the FLIP change process. Delays in FLIP changes can cause problems in military exercises, as well as hazards to flight safety. Therefore, the policy on routine changes to FLIPs remains, up to now, unchallenged by either USAF or DMA representatives.

Disagreement surfaced when the feedback card was discussed as a vehicle for submitting recommendations for improvement. The data collected by DMAAC indicated one-quarter of USAF aviators have used the DMA Quality Feedback Card to submit recommendations for improvements rather than quality related items. Also, ACSC survey results indicated over 40 percent of the USAF aviators polled felt the feedback card is the best mechanism to submit recommendations for improvements. Conversation with DMA representatives indicated that use of this card for recommendations will not adversely affect their production operations. These cards will simply be routed to the customers appropriate OPR, thereby relieving the customer of regulation or manual searching during flight operations.

The biggest change in policy must come from HQ USAF/XOORF and USAFIFC. If aviators are allowed to use this card for recommending improvements to FLIPs, the USAF OPRs must follow through with these requests. Many of these recommendations are ideas generated by aviators who use FLIP products routinely. These ideas are worthy of evaluation to determine if they can make an aviator's job easier, more efficient, and safer. XOORF should formulate policy for USAFIFC and AFCC that will ensure

recommendations for improvements submitted by USAF aviators via the DMA Quality Feedback Card are properly staffed.

The key to a successful feedback system is a continuous loop back to the customer (3:7). DMAAC policy stipulates that customers will always be provided a response to their feedback card. In the case of recommendations to improvements, DMAAC notifies the customer that their comment is an item controlled by the MILDEPs and it has been forwarded to the appropriate MILDEP OPR for review. Current agreements with USAFIFC also requires DMAAC to inform the customer there is no guarantee their recommendation will be properly staffed and are referred to FLIP General Planning Document, Chapter Eleven for further information. This policy creates additional paperwork and delays action on the recommendation. USAFIFC and AFCC should have standard procedures to coordinate the customer response with the USAF MAJCOMs and determine if the suggestion is worthy of a USAF coordinated request. If so, the USAF should take the appropriate action through DMAAC or the FLIP Coordinating Committee (FCC) to institute the customers recommendation. If the recommendation is determined not to be in the best interest of the USAF or FCC, the recommendation is denied. Either way, the customer should be provided a letter, message, or phone call as to the final outcome of their suggestion. This is the only method to ensure free flowing interchange of information and ideas between the FLIP users, producers, and MILDEPs. Also, what better method to improve FLIP products than by ideas submitted by those who use them.

The above suggested policy will produce some increase in the work load of the Aeronautical Information Branch at USAFIFC and the Evaluation Division at AFCC. But, the increase in customer service support should be equally offset by improved quality in FLIP products, an increase in flight safety, and greater customer satisfaction in the FLIP arena. A primary suggestion by the OPRs throughout this investigation was to increase the guidance in FLIP General Planning, add instructions to the card itself, or amend the regulations. The ACSC survey clearly pointed out that additional guidance in FLIP General Planning or Air Force regulations would provide little improvement to this problem since over 98 percent of those surveyed were neither familiar with Chapter Eleven in FLIP General Planning or the Air Force regulations associated with FLIP. Only the suggestion for additional guidance on the feedback card itself appears to have merit.

The USAF should adopt the policy of using the DMA Quality Feedback Card to their advantage rather than opposing practices that have become routine. The feedback card is often used for submitting comments or recommendations about FLIPs because it is handy when FLIP products are actually being used. Requiring an aviator to perform a post flight procedure about a FLIP

problem or incident that may have happened 2 to 10 hours prior to landing is unrealistic. Aviators need an easy, quick method to feed the USAF ideas for better support and improving the FLIP materials they use daily. The DMA Quality Feedback Card is one such method already available in the cockpits of USAF aviators.

To support the role of the DMA Quality Feedback Card as a mechanism for submitting recommendations for improvement, a few simple changes must be accomplished. First, some form of guidance explaining the revised purpose of the feedback card should be permanently placed in the General Information section of the FLIP Enroute Supplements. Many aviators are unaware of FLIP General Planning Guidance and few carry planning documents on the aircraft. However, FLIP Enroute Supplements are common to all USAF aircraft cockpits. Additionally, this guidance should appear in the Special Notices section of the supplements for at least three issues to gain the aviator's attention. This notice should also refer the customer to FLIP General Planning Document, Chapter Eleven for further clarification or information on the feedback process. The FLIP Enroute Supplement notice should simply supply the user with a quick explanation of the feedback card purpose. Although DMA is committed to processing all comments submitted via the feedback card, this note should clearly state that use of this card is not intended for routine changes or revisions to FLIP. Use of the DMA Quality Feedback Card for these purposes will impair the USAF FLIP update system and possibly jeopardize flight safety and completion of U.S. military operations. It is not necessary to mention Air Force Regulations 55-2 or 60-27 in the enroute supplements since neither regulation applies to the feedback card itself. Additionally, a note should be added to all DMA Quality Feedback Cards placed in FLIP documents. This note should refer the customer to the General Information section in the FLIP Enroute Supplements for guidance on the use of the DMA Quality Feedback Card. These changes should create a feedback system where the customer has easy access to instructions rather than depending on the availability of FLIP planning documents, often not carried in the aircraft.

The final step is probably the most important and, from the evidence surfaced, the most neglected. The USAF must institute training on the USAF FLIP feedback system. The most likely place to perform this process is during UFT. Here future aviators can be familiarized with FLIP General Planning Document, Chapter Eleven and associated Air Force regulations. The aviators can also be familiarized with the DMA Quality Feedback Card and presented with the USAF definition of its purpose and designated usage. Based on conversations with ATC, it would be fairly easy to establish this block of instruction into existing UPT syllabi. ATC estimated this additional training would take approximately 15 minutes to cover. These

few minutes would ensure all aviators have standardized knowledge of the FLIP feedback process and could simultaneously encourage aviators to freely express ideas on improving FLIP products. This policy would also ensure young officers begin their careers with an attitude of two-way communication and an environment that appreciates new and better ways of doing business.

The USAF should take the leading step in establishing the DMA Quality Feedback Card as an official mechanism for submitting recommendations for improvements. Appendix B contains a list of recommendations and suggested OPRs for each phase of implementation. Care should be taken to ensure all recommendations are properly staffed by the USAF and FCC prior to any action by DMAAC.

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APPENDIX

Appendix A:

Survey Questionnaire

ACSC Survey Control Number 88-2, Expires 1 Apr 88

KNOWLEDGE AND OPINION OF FLIGHT INFORMATION PUBLICATION (FLIP) FEEDBACK

INSTRUCTIONS: HELP YOUR FELLOW ACSC STUDENT WITH HIS RESEARCH PROJECT; BUT, MORE IMPORTANTLY, HELP YOUR FELLOW AIR FORCE AVIATORS. PLEASE TAKE A MINUTE TO COMPLETE THIS QUESTIONNAIRE ON THE FEEDBACK PROCESSES FOR FLIGHT INFORMATION PUBLICATION (FLIP) PRODUCTS. PLEASE FILL IN THE ANSWERS WITH A NO.2 LEAD PENCIL ON THE ENCLOSED ANSWER SHEET. START WITH NUMBER 153 IN THE RESPONSE AREA. THEN RETURN THE COMPLETED ANSWER SHEET TO SEMINAR 10 VIA THE ACSC MAIL SYSTEM, OR DROP IT OFF IN ROOM 216. REQUEST YOU RETURN THE ANSWER SHEET NO LATER THAN 23 OCTOBER 1987.

THANKS.

153. WHICH AERONAUTICAL RATING DO YOU HAVE?
   A. PILOT
   B. NAVIGATOR

154. IN WHICH MAJCOM WAS THE MAJORITY OF YOUR FLYING EXPERIENCE GAINED?
   A. AAC
   B. ATC
   C. MAC
   D. PACAF
   E. SAC
   F. TAC
   G. USAFE
   H. OTHER

155. HOW MANY YEARS OF RATED SERVICE DO YOU HAVE IN THE USAF?
   A. UNDER 10 YEARS
   B. 10 - 13 YEARS
   C. 14 - 15 YEARS
   D. OVER 15 YEARS

156. HOW MANY SORTIES DID YOU AVERAGE PER MONTH IN AN OPERATIONAL SQUADRON? (USED TO DETERMINE FREQUENCY OF FLIP PRODUCT USAGE)
   A. UNDER 5 SORTIES.
   B. 5 - 15 SORTIES.
   C. 16 - 25 SORTIES.
   D. OVER 26 SORTIES.

157. HAVE YOU EVER USED A DMA QUALITY FEEDBACK CARD, LOCATED IN FLIP ENROUTE SUPPLEMENTS? (SEE ATTACHED CARD)
   A. NO
   B. YES
   C. NEVER HEARD OF IT.

158. WHAT DO YOU PERCEIVE THE PURPOSE OF THE DMA QUALITY FEEDBACK CARD TO BE? (MARK ALL APPROPRIATE ANSWERS)
   A. IDENTIFY QUALITY RELATED ITEMS.
   B. UPDATE AERONAUTICAL DATA ON FLIP PRODUCTS.
   C. RECOMMEND IMPROVEMENTS TO FLIP PRODUCTS.
   D. ALL OF THE ABOVE.
   E. NONE OF THE ABOVE.

159. ARE YOU FAMILIAR WITH THE UPDATE GUIDANCE IN FLIP GENERAL PLANNING, CHAPTER 11?
   A. YES
   B. NO

160. ARE YOU FAMILIAR WITH THE FLIP FEEDBACK PROCESSES IDENTIFIED IN AF REGULATION 55-2, OPERATIONS AIRSPACE MANAGEMENT?
   A. YES
   B. NO (SKIP TO #162)

161. ARE THE METHODS TO SUBMIT RECOMMENDATIONS FOR IMPROVEMENTS TO FLIP PRODUCTS OUTLINED IN AF REGULATION 55-2 _____?
   A. CLEAR AND EASY TO USE.
   B. TOO COMPLICATED TO USE.
   C. DON'T REMEMBER IF THEY WERE CLEAR OR TOO COMPLICATED TO USE.
   D. NEVER USED THEM.

162. ARE YOU FAMILIAR WITH THE FLIP FEEDBACK PROCESSES IDENTIFIED IN AF REGULATION 60-27, FLYING INSTRUMENT PROCEDURES?
   A. YES.
   B. NO. (SKIP TO #164)

163. ARE THE METHODS TO SUBMIT RECOMMENDATIONS FOR IMPROVEMENTS TO FLIP PRODUCTS OUTLINED IN AF REGULATION 60-27 _____?
   A. CLEAR AND EASY TO USE.
   B. TOO COMPLICATED TO USE.
   C. DON'T REMEMBER IF THEY WERE CLEAR OR TOO COMPLICATED TO USE.
   D. NEVER USED THEM.

164. DID YOU RECEIVE ANY TRAINING ON THE FLIP FEEDBACK PROCESS OR METHODS TO SUBMIT RECOMMENDATIONS FOR IMPROVEMENTS TO FLIP PRODUCTS?
   A. YES.
   B. NO. (SKIP TO #167)

165. HOW MANY HOURS OF TRAINING DID YOU RECEIVE?
   A. LESS THAN 1 HOUR.
   B. 1 TO 3 HOURS.
   C. 4 TO 6 HOURS
   D. OVER 6 HOURS.

166. WHERE DID THIS TRAINING OCCUR? (MARK ALL APPROPRIATE ANSWERS)
   A. UNDERGRADUATE FLYING TRAINING (UPT OR UNT)
   B. ADVANCED TRAINING (RTU OR CCTS)
   C. WING/SQUADRON TRAINING (CONTINUATION TRAINING)

167. IF YOU HAD A RECOMMENDATION FOR IMPROVING FLIP PRODUCTS AND THE LIBERTY TO CHOOSE THE UPDATE MECHANISM, WHICH WOULD YOU CHOOSE?
   A. PHONE CALL.
   B. LETTER OR MEMORANDUM.
   C. DMA QUALITY FEEDBACK CARD.
   D. AF MODEL INSTALLATION PROGRAM FORM.
   E. AF SUGGESTION PROGRAM, AF FORM 1000.
   F. OTHER? (PLEASE IDENTIFY IN "ADDITIONAL COMMENTS")

ADDITIONAL COMMENTS: _____

_____

_____

_____

_____

APPENDIX

Appendix B:

Recommendations and OPRs

Appendix B

Recommendation	OPR	Coordinate
Designate the DMA Quality Feedback Card as an acceptable mechanism for submission of either quality related items or recommendations for improvements.	HQ USAF/XOORF	FCC
Develop USAF policy for ensuring recommendations for improvement to FLIP products via the DMA Quality Feedback Card are properly staffed. Note: MILDEP instructions in FLIP General Planning Document, Chapter Eleven will require revision.	USAFIFC/AI AFCC/ATTE	DMAAC/PRF
Develop and implement a block of instruction on the USAF FLIP Feedback process. This block should include guidance on the proper use of the DMA Quality Feedback Card.	ATC/DOTC	ATC/3305 School Sq.
Develop and implement new guidance on the use of the DMA Quality Feedback Card. This guidance should revise the information in FLIP General Planning Document, Chapter Eleven and be added to FLIP Enroute Supplements, General Information sections.	DMAAC/PRF	FCC DMAAC/QA DMAAC/PPCF
Add a note to the DMA Quality Feedback Card referring the customer to the General Information section of FLIP Enroute Supplements for further information on the feedback process.	DMAAC/QA	DMAAC/PRF DMAAC/PPCF

APPENDIX

Appendix C:

Acronyms

Appendix C

Acronym	Definition
AAK	Alaskan Air Command
ACSC	Air Command and Staff College
AFCC	Air Force Communications Command
AFMPC	Air Force Military Personnel Center
ATC	Air Training Command
DMA	Defense Mapping Agency
DMAAC	Defense Mapping Agency Aerospace Center
DMACSC	Defense Mapping Agency Combat Support Center
DMAHTC	Defense Mapping Agency Hydrographic/Topographic Center
FAA	Federal Aviation Administration
FCC	FLIP Coordinating Committee
FICODAB	Field Correspondence Data Base
FLIP	Flight Information Publications
MAC	Military Airlift Command
MAJCOM	Major Command
MILDEP	Military Department
OPR	Office of Primary Responsibility
PACAF	Pacific Air Forces
SAC	Strategic Air Command
TAC	Tactical Air Command
TAF	Tactical Air Forces (Unofficial)
UFT	Undergraduate Flying Training
UNT	Undergraduate Navigator Training
UPT	Undergraduate Pilot Training
USAF	United States Air Force
USAFE	United States Air Forces in Europe
USAFIFC	United States Air Force Instrument Flight Center

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